

Claims:

- 5 1. A device for filling and reinforcing an internal tunnel in a tooth (2) from which tooth approximal caries has been removed by means of a tunnel preparation (1) and for preventing overhangs, characterized by a closed first elongate and flexible container means (3) having one end provided with a tip or string (4) to enable insertion of said first container means (3) into an interdental space (5) adjacent the portion of said tooth (2), from which approximal caries has been removed, said first container means (3) being pre-filled or fillable with a flowable restorative material (6), which is intended to flow into and fill said tunnel preparation (1) as soon as a hole (7) has been punched into said first container means (3) for instance by means of a needle (8) brought into contact with said container means (3) through said tunnel preparation (1).
- 10 2. A device according to claim 1, characterized in that said closed first container means (3) is pre-filled to about 60 to 80 % of its volume with a flowable restorative material (6).
- 15 25 3. A device according to claim 2, characterized in that a second closed and flexible container means (9) is attached or attachable to the device.
- 30 35 4. A device according to claim 3, characterized in that the second container means (9) is attached or attachable to the tip or string (4) of the first flexible container means (3).
- 35 5. A device according to claim 4, characterized in that the second container means (9) is attachable to the string (4) of the first container means (3) by means of a ring or

a string (10) mounted to one end of said second container means (10), when said first container means (3) has been pulled into an interdental space (5) adjacent a tooth (2) from which approximal caries has been removed.

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6. A device according to claim 3, characterized in that the second container means (9) is prefilled to a predetermined thickness and resiliency with a medium (11) such as a liquid, a gas or a gel in order to seal a proximal tunnel opening when said second container means (9) has been drawn into said interdental space (5) on removing the first container means (3) from said interdental space (5) after said tunnel preparation (1) has been filled.

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7. A device according to claim 6, characterized in that said medium (11) is a photoluminescing medium enabling photocuring of the dental restorative resin (6) filled into the tunnel preparation (1) by irradiation with visible light (12).

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8. A device according to claim 6, characterized in that the second container means (9) is provided with an axially extending, flexible and laterally lighting fiber optic (11b) enabling curing, by means of lasers, plasma arc or halogen light, of a dental restorative resin (6) filled into a tunnel preparation (1) from said first container means (3).

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9. A device according to claim 6, characterized in that said second container means (9) includes a triboluminescence system, i.e. luciferin (11) and a luciferase capsule (11a) providing chemiluminescence when said container means (9) is squeezed or bent breaking said luciferase capsule (11b) and bringing both components into contact with each other.

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10. A device according to claim 6, characterized in that said second container (9) includes a combination of chemiluminescence (11,11a) and a fiber optic (11b).
- 5 11. A device according to claim 1, characterized in that the first flexible container means (3) is made of photo-blocking nylon, preferably of a see through orange nylon or analogue material.
- 10 12. A device according to claim 3, characterized in that the first and the second flexible container means (3, 9) are made of transparent nylon or analogue transparent material.
- 15 13. A device according to claim 3, characterized in that the first flexible container means (3) is substantially cylindrical and the second flexible container means (9) is cylindrical or slightly conical, widening against the end facing away from the first container means (3).
- 20 14. A device according to claim 3, characterized in that both flexible container means (3,9) are provided with a triangular cross section and having preferably one edge provided with a longitudinal outstanding fin (13).
- 25 15. A device according to claim 14, characterized in that the ends of the container means (3, 9) are squeeze welded to form end fins (16a,16b) parallel to the longitudinal fin (13) of said container means (3, 9), one end fin (16b) of each container means (3, 9) being common to both container means (3,9).
- 30 16. A device according to claim 15, characterized in that the device comprises a number of sequential container means (I - VII), connected to each other by common end fins (16b), the end fin (16a) in the front end of said device being provided with a string (4) to facilitate in-

sertion of said device into an interdental space (5), and the longitudinal fin (13) being provided with indications of the purpose of each container means (I-VII), which container means (I-VII) are intended to be pulled step by step into the interdental space (5).

5 17. A device according to claim 1, characterized in that the opposite end of the first flexible container means (3) is laser, heat or chemically bonded to the outlet opening (18) of a cartridge (19), filled with said flowable restorative material (6) and adaptable to an applicator device (20).

10 18. A device according to claim 17, characterized in that the first flexible container means (3) is in a vacuumized thin and flat condition before use.

15 19. A device according to claim 18, characterized in that a second closed and flexible container means (9) is attached or attachable to the device.

20 20. A device according to claim 19, characterized in that the second container means (9) is provided with a string (10) at one end, which string is intended to be threaded through an interdental space (5) from one side before the string (4) of the first container means (3) is threaded into said interdental space (5) from the opposite side, whereby the cartridge (19) or the applicator device (20) is provided with a hook (21) to which the string (10) of the second container means (9) is intended to be hooked.

25 30 35 21. A device according to claim 19, characterized in that the second container means (9) is intended to be attached to the string (4) of the first container means (3) when said first container means (3) has been threaded into an interdental space (5).

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22. A device according to claim 19, characterized in that the cartridge (19) is 100% photoblocked, or made by a see through orange photoblocked plastics.

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